

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A circularly permuted avidin monomer, ~~characterized in that~~ wherein the carboxyl terminal amino acid and the amino terminal amino acid of the polypeptide of the avidin monomer have been joined directly or via a linker, and new carboxyl and amino termini have been created by cleavage of the polypeptide and the resulting circularly permuted avidin monomer binds biotin or other ligand.

2. (currently amended) The circularly permuted avidin monomer of claim 1, ~~characterized in that~~ wherein the avidin is selected from wild type avidin, mutant form of avidin, streptavidin and variant of avidin, such as other poultry avidins and chicken avidin-related proteins (AVRs).

3. (currently amended) The circularly permuted avidin monomer of claim 1, ~~characterized in that~~ wherein the carboxyl terminal amino acid and amino terminal amino acid have been joined by a linker comprising one or more amino acids.

4. (currently amended) The circularly permuted avidin monomer of claim 3, ~~characterized in that~~ wherein the linker is a

hexapeptide comprising four glycine residues and two serine residues and wherein one glycine is connected to the carboxyl terminal amino acid and one serine is connected to the amino terminal amino acid.

5. (currently amended) The circularly permuted avidin monomer of claim 1, ~~characterized in that~~ wherein the circularly permuted monomer is cpAvd5→4.

6. (currently amended) The circularly permuted avidin monomer of claim 1, ~~characterized in that~~ wherein the circularly permuted monomer is cpAvd6→5.

7. (currently amended) The circularly permuted avidin monomer of claim 1, ~~characterized in that~~ wherein the circularly permuted monomer is cpAvd4→3.

8. (currently amended) The circularly permuted avidin monomer of claim 5, ~~6 or 7~~, ~~characterized in that~~ wherein the monomer has been mutated.

9. (currently amended) The circularly permuted avidin monomer of claim 5, ~~6 or 7~~, ~~characterized in that~~ wherein the monomer has been mutated by changing the tyrosine residue 33 to any other amino acid residue X and/or the isoleucine residue 117 to any other amino acid residue X and/or the serine residue 16 to any other amino acid residue X and/or the

threonine residue 35 to any other amino acid residue X and/or the asparagine residue 118 to any other amino acid residue X, (Y33X, I117X, S16X, T35X, N118X).

10. (currently amended) The circularly permuted avidin monomer of claim 9, ~~characterized in that~~ wherein the monomer has been mutated by changing the tyrosine residue 33 to histidine residue and/or the isoleucine residue 117 to cysteine residue and/or the serine residue 16 to alanine residue and/or the threonine residue 35 to alanine residue and/or the asparagine residue 118 to methionine, (Y33H, I117C, S16A, T35A, N118M).

11. (currently amended) A dual-chain avidin (dcAvd), ~~characterized in that~~ it wherein said dual-chain avidin comprises a fusion of two of the monomers selected from the circularly permuted monomer cpAvd5 \rightarrow 4, the circularly permuted monomer cpAvd6 \rightarrow 5, and the circularly permuted monomer cpAvd4 \rightarrow 3, or the mutated monomer forms of one of the claims 8 to 10, and the resulting dual-chain avidin binds biotin and/or other ligand.

12. (currently amended) A dual-chain avidin of claim 11, ~~characterized in that~~ wherein the two monomers are fused together directly or joined by means of a spacer.

13. (currently amended) A dual-chain avidin of claim 12, ~~characterized in that wherein~~ the spacer is a peptide spacer from about 1 to 40 amino acid residues.

14. (Currently Amended) A dual-chain avidin of claim 13, ~~characterized in that wherein~~ the spacer is a peptide SGG or SGGS (SEQ ID NO: 30).

15. (currently amended) The circularly permuted avidin monomer of claim 1, ~~characterized in that wherein~~ the biotin-binding affinity of the circularly permuted avidin is different from the wild type avidin biotin-binding affinity.

16. (currently amended) The circularly permuted avidin monomer of claim 1, ~~characterized in that wherein~~ the HABA-binding affinity of the circularly permuted avidin is different from the wild type avidin HABA-binding affinity.

17. (currently amended) A dual-chain pseudo-tetrameric avidin, ~~characterized in that it wherein said dual-chain pseudo-tetrameric avidin comprises two dual-chain avidins~~ (dcAvd).

18. (currently amended) A dual-chain pseudo-tetrameric avidin of claim 17, ~~characterized in that it wherein said dual-chain pseudo-tetrameric avidin binds biotin.~~

19. (currently amended) A single-chain avidin (scAvd), ~~characterized in that it wherein said single-chain avidin~~

comprises two dual-chain avidin (dcAvd) molecules of claim 11 fused together to form a single polypeptide.

20. (currently amended) A single-chain avidin of claim 19, ~~characterized in that wherein~~ the dcAvd-molecules are fused together via a linker.

21. (currently amended) A single-chain avidin of claim 20, ~~characterized in that wherein~~ the linker is a 12 amino-acid linker GGSGSGSGSGSG (SEQ ID NO: 31).

22. (currently amended) An isolated polynucleotide encoding any of the avidin proteins of ~~claims 1-21~~ claim 1.

23. (Original) A recombinant vector comprising the polynucleotide of claim 22, wherein the polynucleotide is DNA.

24. (Original) A recombinant host cell comprising the polynucleotide of claim 22, wherein said polynucleotide is DNA.

25. (Original) A method for producing a polypeptide comprising expressing from the recombinant cell of claim 24 the polypeptide encoded by said polynucleotide.